inter-office memo

TO: Distribution

FROM: Michael Ekber, Brian Johnston   4/23/80

SUBJECT: KNOWN BASIC PROBLEMS

If any additional errors appear, send information to Brian Johnston.

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DIFFICULTIES WITH BASIC

This document contains all the BASIC bugs which I was aware of as of the above date, including some which were made known previously which were never fixed.

1. When the INPUT command is used without an expression, then the program it is in may lock-up, or if using DOS you might get "error 9", or as in the example below, BASIC will put the input value in A. BASIC does not do error syntax check, error trap, or recover from this situation.

        ex.   10   INPUT
              20   PRINT A

2. Programs like the following cannot be stopped by using the BRK key. Sometimes the BRK key halts the program, but pressing BRK again starts it printing again.

        ex.   10   LPRINT "HI",
              20   GOTO 10

3.　INPUT I\$ returns different values depending on the graphics mode the computer is in.　INPUT'ing a return in GR.0, the IF condition is true. In GR.1 thru 8, it is false.

　　　　ex.　10　INPUT I\$
　　　　　　　20　IF LEN(I\$)=0 Then ? "True"

4.　<u>PRINT A = NOT B</u>

The above statement causes BASIC to crash.　The sequence "= NOT", where '=' is a logical equals, appears to be the problem. Any comparison operator ('<', '>', etc.) in place of the '=' will also cause a crash.　In addition "PRINT NOT NOT B" will cause a crash.　The way of getting around this problem is to enclose the expression "NOT expression" in parenthesis, e.g. "PRINT A = (NOT B)".

5.　<u>DIM L (30)</u>

If there are spaces between an array or string name and the '(' then when the string is processed the '(' token disappears resulting in the following:

<u>DIM L30)</u>

An error message is given when the statement is executed, but not when it is entered originally.

6a.　<u>?LOG(0)</u>

-298.123817 (BASIC floating point package result)
?CLOG(0)
-129.473529
The log of 0 is actually -infinity (undefined) so this should be a special case which gives an error message.

6b.　<u>?CLOG(1)</u>

4.60517018E-10
Should be 0 exactly (same for LOG(1)).

Difficulties with BASIC, cont.

7. The statement PRINT -0 results in garbage output (i.e. -0E-<8).

8. Using PRINT after a "GET#6, avar" erases that location on the
    screen. A fix for this is to PUT the value back after the GET
    and before the PRINT. In the example below, if line 70 is
    removed, the letter J will be erased.

    ex.   10   GRAPHICS 0
          15   ? "ABCDEFGHIJKLMNO"
          40   POSITION 2,0
          50   FOR I=1 to 10
          55   GET #6,A
          60   NEXT I
          70   POSITION 0,0:GET #6,A:POSITION 0,0:PUT #6,A
          80   POSITION 2,3:?"DONE"

9. PEEK(93) should return the data under the cursor but it is
    always 0.

10. When a program that is too large for the memory is read in
    from disk, it sometimes locks up the keyboard, which doesn't
    tell the user very much.

11. ENTER cannot be used within a program. BASIC returns to READY
    instead of returning to program.

12. Programmers should be aware that two versions of DOS are now
    available. Both versions have the date 9/24/79 but the best
    and most recent version says XXX FREE SECTORS when you display
    a directory. The original version just gives XXX. This new
    version is reliable and eliminates some problems we have had
    with the sector available information getting messed up. One
    known cause of such a problem is when a BASIC program that has
    OPENed a file crashes. If the program is run again immediately
    without closing the OPENed files the directory may be damaged.
    To avoid this on a crash with the original DOS type GOTO XXXX
    in the immediate mode where XXXX is the line number of an END
    statement in your program.

13. On long literal strings, the editor sometimes cuts off a
    statement at the end of a line and starts a new statement,
    which results in the statement being truncated, and the
    computer trying to execute the remainder of the statement in
    immediate mode.

Difficulties with BASIC, cont.

14. We are having problems with loading and saving programs from and to cassettes. The common error messages include error 138 and error 143 at line 0. Niles Strohls group seems to think that probably BASIC or the cassette handler is not setting an Antic register correctly during a CSAVE call. To correctly set this register do an LP. before CSAVE.

15. BASIC may crash if a program is a certain length and line(s) are deleted. Has to do with buffer management. Happens even when DOS isn't loaded. The programmer is thus advised to make sure he has SAVED or LISTED his program before he begins any deletions that are in the middle of a long program.

16. FILL (XIO command = 18)

    The top line of the fill area is not filled in. You must use the DRAWTO command to fill in this line.

17. KEYWORDS AS PART OF VARIABLE NAMES

        ex.   B=0
              NOTB=2
              ?NOTB
              1

    The variable NOTB can be assigned to, but cannot be printed because in the PRINT statement, the NOT is picked up as a logical operator. The same problem occurs with AND and OR. If BASIC detected the keyword NOT in the assignment statement and reported a syntax error, this confusing situation would not arise. This is an example of why a variable name should not start with a keyword.